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| ☐ | L12 | L11 and (DAG or (directed adj acyclic adj graph$1)) | 0 |
| ☐ | L11 | L10 and ((segment$ or extract$ or index$) near3 object$1) with multimedia | 22 |
| ☐ | L10 | L9 and L7 | 767 |
| ☐ | L9 | (order$ or rank$ or compar$) with multimedia | 5897 |
| ☐ | L8 | L7 and ((order$ or rank$) same multimedia) | 1375 |
| ☐ | L7 | L6 or L5 or L4 or L3 | 167469 |
| ☐ | L6 | (382/218).ccls. | 1100 |
| ☐ | L5 | 709/(231,247).ccls. | 91750 |
| ☐ | L4 | 715/(619,723).ccls. | 92806 |
| ☐ | L3 | (715/501.1).ccls. | 1407 |
| | | *DB=PGPB,USPT; PLUR=YES; OP=OR* | |
| ☐ | L2 | US-6628892-$.DID. | 1 |
| ☐ | L1 | US-6868225-$.DID. OR US-6850691-$.DID. OR US-6847778-$.DID. OR US-6792195-$.DID. OR US-6327418-$.DID. | 5 |

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# Multimedia content classification using motion and audio information

Yao Wang   Jincheng Huang   Zhu Liu   Tsuhan Chen
Polytech. Univ., Brooklyn, NY, USA ;

09/518,937

**Abstract**
Content-based video segmentation and classification is a key to the success of future multimedia databases. Research in this area in the past several years has focused on the use of speech recognition and image analysis techniques. As a complimentary effort to prior research, we have focused on the use of motion and **audio** characteristics. Fundamental to both segmentation and classification tasks is the characterization by certain features of a given video segment. In this paper, we describe several **audio** and motion features that have been found to be effective in distinguishing motion and **audio** characteristics of different types of scene

**Index Terms**
**Inspec**

**Controlled Indexing**
acoustic signal processing   **audio** signals   image classification   image segmentation   motion estimation   multimedia computing   speech processing   video signal processing

**Non-controlled Indexing**
**audio** characteristics   content-based video classification   content-based video segmentation motion characteristics   **multimedia content classification**   multimedia databases

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# Hierarchical classification of audio data for archiving and retrieving

Tong Zhang  Kuo, C.-C.J.
Integrated Media Syst. Center, Univ. of Southern California, Los Angeles, CA, USA;

**Abstract**

A hierarchical system for audio classification and retrieval based on audio content analysis is presented in th paper. The system consists of three stages. The first stage is called the coarse-level audio classification and segmentation, where audio recordings are classified and segmented into speech, music, several types of environmental sounds, and silence, based on morphological and statistical analysis of temporal curves of short-time features of audio signals. In the second stage, environmental sounds are further classified into fin classes such as applause, rain, bird sound, etc. This fine-level classification is based on time-frequency analysis of audio signals and use of the hidden Markov model (HMM) for classification. In the third stage, the query-by-example audio retrieval is implemented where similar sounds can be found according to an input sample audio. It is shown that the proposed system has achieved an accuracy higher than 90% for coarse-level audio classification. Examples of audio fine classification and audio retrieval are also provided

**Index Terms**
**Inspec**

**Controlled Indexing**
audio signal processing   content-based retrieval   database management systems   feature extraction   hidden Markov models   information retrieval   mathematical morphology   signal classification   statistical analysis   time-frequency analysis

**Non-controlled Indexing**
archiving   audio classification   audio content analysis   **audio data**   audio recordings   audio signal   coarse-level audio classification   environmental sounds   hidden Markov model   **hierarchical classification**   morphological analysis   music   query-by-example audio retrieval   retrieval   segmentation   silence   speech   statistical analysis   temporal curve time-frequency analysis

**Author Keywords**
Not Available

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# Scene determination based on video and audio features

Lienbart, R.   Pfeiffer, S.   Effelsberg, W.
Intel Res. Lab., Santa Clara, CA, USA ;

**Abstract**
Determining automatically what constitutes a scene in a **video** is a challenging task, particularly since there i
no precise definition of the term "scene". It is left to the individual to set attributes shared by consecutive sho
which group them into scenes. Certain basic attributes such as dialogs, like settings and continuing sounds ε
consistent indicators. We have therefore developed a scheme for identifying scenes by clustering shots
according to detected dialogs, like settings and similar audio. Results from experiments show automatic
identification of these types of scenes to be reliable

**Index Terms**
**Inspec**
> **Controlled Indexing**
> content-based retrieval   multimedia databases   video databases

> **Non-controlled Indexing**
> audio features   automatic scene identification   consecutive shots   content based analysis
> continuing sounds   dialogs   experiments   multimedia   **scene determination**   shot
> clustering   video features

**Author Keywords**
Not Available

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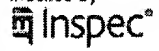
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# Content-based classification, search, and retrieval of audio

Wold, E.  Blum, T.  Keislar, D.  Wheaten, J.
Dept. of Electr. Eng. & Comput. Sci., California Univ., Berkeley, CA, USA;

## Abstract
Many audio and multimedia applications would benefit from the ability to classify and search for audio base‹ on its characteristics. The audio analysis, search, and classification engine described here reduces sounds l perceptual and acoustical features. This lets users search or retrieve sounds by any one feature or a combination of them, by specifying previously learned classes based on these features, or by selecting or entering reference sounds and asking the engine to retrieve similar or dissimilar sounds

## Index Terms
**Inspec**

> **Controlled Indexing**
> classification   information retrieval   multimedia computing   multimedia systems

> **Non-controlled Indexing**
> audio  classification  content-based  multimedia  retrieval  search

**Author Keywords**
Not Available

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# Integrated image and speech analysis for content-based video indexing

Yuh-Lin Chang   Wenjun Zeng   Kamel, I.   Alonso, R.
Matsushita Inf. Technol. Lab., Panasonic Technol. Inc., Princeton, NJ, USA;

## Abstract

We study an important problem in **multimedia** database, namely the automatic extraction of indexing information from raw data based on video contents. The goal of our research project is to develop a prototyp system for automatic indexing of sports videos. The novelty of our work is that we propose to integrate speec understanding and image **analysis** algorithms for extracting information. The main thrust of this work comes from the observation that in news or sports video indexing, usually speech **analysis** is more efficient in detecting events than image analysis. Therefore, in our system, the audio processing modules are first appli to locate candidates in the whole data. This information is passed to the video processing modules, which further analyze the video. The final products of video **analysis** are in the form of pointers to the locations of interesting events in a video. Our algorithms have been tested extensively with real TV programs, and result are presented and discussed

## Index Terms
### Inspec

#### Controlled Indexing
audio-visual systems   information retrieval   interactive video   **multimedia** computing   sport

#### Non-controlled Indexing
audio processing modules   automatic extraction   automatic indexing   **content** based video indexing   image **analysis**   image **analysis** algorithms   indexing information   interesting events   **multimedia** database   raw data   real TV programs   speech **analysis**   speech understanding   sports videos   video **contents**   video processing modules

### Author Keywords
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